EMBO
reports

opinion

Darwin, race and gender

Given all the celebrations, conferences, special issues and TV programmes, everyone must know by now that it is 200 years since Charles Darwin was born and 150 years since the publication of *The Origin of Species* (1859). Among the spate of books published on this occasion, one actually stands out in its novelty: the claim that Darwin's evolutionary theory was inspired by his hatred of slavery, as especially experienced during his epic *Beagle* voyage (Desmond & Moore, 2009). It is a nice try, but it does not convince me; Thomas Malthus and the Galapagos finches provide a much more plausible origin for the theory of evolution by natural selection.

Darwin was, after all, a man of his time, class and society. True, he was committed to a monogenic, rather than the prevailing polygenic, view of human origins, but he still divided humanity into distinct races according to differences in skin, eye or hair colour. He was also convinced that evolution was progressive, and that the white races—especially the Europeans—were evolutionarily more advanced than the black races, thus establishing race differences and a racial hierarchy. Darwin's views on gender, too, were utterly conventional. He stated that the result of sexual selection is for men to be, "more courageous, pugnacious and energetic than woman [with] a more inventive genius. His brain is absolutely larger […] the formation of her skull is said to be intermediate between the child and the man" (Darwin 1871). Although female choice explains sexual selection, it is the males who evolve in order to meet the chosen criteria of strength and power; such nineteenth century differentiation between the sexes was crucial in providing an alleged biological basis for the superiority of the male.

Any attempt to separate a 'good' Darwin from a 'bad' Social Darwinist cannot be sustained against a careful reading of Darwin's own writing. He enthusiastically endorsed his cousin Francis Galton's view of hereditary genius transmitted down the male line, and nodded cautiously towards eugenics. During the 150 years since Darwin wrote such views on race, gender and eugenics, whilst sometimes subterranean, they have never entirely vanished; a sorry history, often told.

Current developments in both genetics and neuroscience are raising them again, however, clothed in modern language. The biological sciences are becoming re-racialized and re-sexed. Distinct population groups—not races in the biological sense—do, after all, show reliable variations in gene frequencies, some of which are associated with known disorders such as Tay–Sachs disease or cystic fibrosis. And there are small but robust differences, chemically and anatomically, between the brains of men and women, although nobody has any real idea what the implications might be. A recent essay in *Nature* even argues that it is time to re-open the 'untouchable' question of racial and gender differences in intelligence—or rather, its ostensible surrogate measure, IQ (Ceci & Williams, 2009).

My response to this likened asking such questions about group differences in intelligence to research on phlogiston in an era of modern chemistry (Rose, 2009), and I do not wish to reprise those arguments here. Instead, I want to reflect on the impossible tangles that we have got ourselves into in attempting to reconcile three uses of the term 'race': the popular usage, that used by the social sciences, and that of biologists. For biologists, the definition is, at first sight, reasonably clear: a race is an interbreeding, usually geographically isolated population of organisms differing from other populations of the same species in the frequency of hereditary traits. However, it is hard to apply such definitions to humans. Geographical isolation scarcely exists today, and even in humanity's past it became commonplace that 'genes travel along roads'. Nor is the definition of a 'population' obvious: one can expand or contract the size of the group almost at will (Marks, 2008). Yet, there are differences in gene frequency between those living in north and south Wales, for example. This is why referring to a person's 'biogeographical ancestry' is a more useful term.

Biologists' problems with race are magnified out of all proportion by the well-meaning public-policy attempts to categorize people by 'ethnicity'—understood to be a polite term for the otherwise taboo word 'race'. In the UK, one is routinely asked to classify oneself by a bizarre mixture of skin colour, geographical ancestry and nationality. Categories include White British, Irish, Black British, other European, Asian, African and Mixed. In the USA, people are categorized into, among others, Latino, Hispanic, African or Caucasian. In the USA, 'Asian' means someone from Japan or China, whereas in the UK, it tends to mean someone from the Indian subcontinent. For obscure reasons, 'Caucasian' means White in the West, presumably based on assumptions about Palaeolithic population migrations into Europe from the Caucasus. But, in Russia, people from the Caucasian republics are popularly—and denigratorily—referred to as 'Blacks.' The confusion is complete.

So, what possible purposes could such classifications serve? I suggest that although questions about a person's 'race' are meaningful only in a racist society, questions of biogeographical ancestry remain interesting. Most of us are at least marginally fascinated by our own past, as the enthusiastic response to websites such as Genes Reunited, or the popularity of tracking putative family trees through census data show. More arguably, knowing where we came from can point to potential health risk factors. But, the darker history of genetics—from Darwin's time to the present—suggests just how careful biologists must be in working with such categories.

REFERENCES

Ceci S, Williams WM (2009) YES: the scientific truth must be pursued. *Nature* **457:** 788–789

Darwin C (1859) *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. London, UK: Murray

Darwin C (1871) *The Descent of Man and Selection in Relation to Sex*. London, UK: Murray

Desmond A, Moore J (2009) *Darwin's Sacred Cause: race, slavery and the quest for human origins*. London, UK: Allen Lane
Marks J (2008) Race: past, present, and future. In *Revisiting Race in a genomic Age*, B Koenig, S Lee, S Richardson (Eds), pp 21–38. Piscataway, NJ, USA: Rutgers University Press
Rose S (2009) NO: science and society do not benefit. *Nature* **457:** 786–788

Steven Rose is Professor of Biology and Neurobiology at Open University in the UK. E-mail: s.p.r.rose@open.ac.uk

doi:10.1038/embor.2009.40